TRAINING FOR THE NATIONAL TRAINING CENTER

We are the King of Battle--the greatest killer on the battlefield. Yet at the NTC, devastating fires do not dominate the battlefield. Is it because the NTC does not replicate fires properly? Is it because Field Artillery does not get appropriate credit for the lethality of fires? Perhaps fire markers are late and don't properly replicate the shock and concussion of artillery? Maybe Systems Area Weapons Effects (SAWE) does not work? Does the OPFOR have too many unfair advantages? While each of these may have a grain of truth, in reality they are but excuses. For the real reason we do not reach our potential at NTC is that our home station training does not adequately prepare us for the world class OPFOR--and would likely fall short in combat as well. This article examines some of the shortfalls of fire support at the NTC and offers some ideas for increasing the effectiveness of home station training in preparation for a deployment to the Republic of Mojavia. Better home station training will translate into better performance on the NTC battlefield and more importantly, a greater training experience for soldiers and their leaders.

Maneuver Commander's Guidance and the Essential Fire Support Task. In every mission, this is where successful integration of fire support begins. At the conclusion of the mission analysis briefing, the maneuver commander provides guidance on where and when to apply fires and what fires must achieve. From this guidance we develop our Essential Fire Support Tasks (EFST). During battles at NTC we typically see five or more essential Brigade tasks and have seen as many as nineteen. Contrast this with our maneuver brothers who in their mission analysis will generally extract one essential task--perhaps two with an on-order mission. With high numbers of EFSTs we lose focus, violate the principles of mass and simplicity, and ultimately accomplish few; if any, of our "essential tasks" to standard. Why does this happen? We have developed a cookbook of EFSTs that we apply to every mission without placing emphasis on the tasks crucial to maneuver success from our maneuver commander's guidance. In essence, everything has become essential which unfortunately makes nothing essential. ***The Fix:*** Maneuver commanders should use doctrinal references such as FM 6-71 and FM101-5 to format and present their guidance for fire support. This will assist in the determination of EFSTs, which by definition are tasks that if not accomplished, will require a change to the scheme of maneuver. Using this as the litmus test during home station training, the FSCOORD can derive one or two EFSTs focused on the maneuver commander's decisive points on the battlefield. Make other tasks simply "Fire Support Tasks" much like maneuver units treat tasks to subordinate

units for their non-essential tasks. This will allow the FSCOORD to place focus and emphasis on the task(s) that are *truly essential* to accomplishment of the maneuver mission, yet still address the other required tasks in the scheme of fires.

Targeting the enemy. At the NTC, Field Artillerymen simply do not see the enemy in relation to time, space and terrain. As with any enemy, the OPFOR at NTC has patterns to his operations and understanding how he fights will allow us to attack his vulnerabilities. For example, when out of contact, an OPFOR Motorized Rifle Battalion typically travels in column on trails with a formation extending from three to five kilometers. This road bound enemy presents us with a great opportunity to destroy him in constrictive terrain with groups of linear targets arrayed to attack his formation. Unfortunately we have yet to see him successfully attacked in such a manner. Why not? Without training at home station on enemy organizations and how he uses terrain, we are not agile enough to learn and apply targeting lessons learned during a single NTC rotation to reach success. ***The Fix:*** Study the NTC terrain and OPFOR just as you should any theater of operations to which you are deploying. Take this studying a step further with a MAPEX for fire support personnel requiring them to target a Mojavia area of operations for attack, defense, and movement to contact. Have the Brigade FSO and Targeting Officer plan targets throughout the brigade area of operations--using satellite imagery of terrain and extracting eight digit grids using a plotting square. Require Task Force FSOs to refine those targets in the Task Force zones or sectors in accordance with a Task Force scheme of maneuver--to the same eight digit level of fidelity. Have the S-2 role play the OPFOR with a time and space model (not just an icon) of the enemy moving through terrain. The FSCOORD can evaluate the results and have leaders apply the lessons learned to the unit SOP. If your MAPEX reflects a versatile, highly mobile OPFOR who utilizes terrain for cover, concealment and opportunities to gain positional advantage, then you will start your NTC campaign ready to take targeting to the next level--and destroy the enemy.

Observation Planning. Essential to the successful attack of the enemy with our targeting effort is a sound observation plan to initiate the fires that will ultimately destroy the enemy. Placed at the proper vantage point, an observer can direct fires on the OPFOR by taking advantage of terrain, obstacles and knowledge of OPFOR doctrine. Yet, we seldom see this happen. Why? There is a lack of effective observation plans at both Brigade and Task Force level. At Brigade level, we often see COLTs positioned to support intelligence requirements--observing into wide open battlespace vice areas where terrain offers lucrative target areas. Task Force FSOs tend to

decentralize observation plans allowing Company FSOs to select their own observation posts or remain with the Company Commander to coordinate fires for the company. At best, the Company FSOs are given targets to observe, but no direct guidance as to where to position. The unfortunate result is that observers, focused on supporting the Company, are often unable to see the targets essential to the Task Force. To make matters worse, our decentralized approach leaves gaps in observation of the Task Force and Brigade battlespace, allowing the OPFOR to use terrain with impunity from indirect fire. Contrast this with the OPFOR who positions observers throughout the depth of their battlespace and who are not considered in position until their communications are operational. ***The Fix:*** After completing the targeting MAPEX, direct the Brigade and Task Force FSOs to create centralized observation plans to support their targets. Require them to use terra base to validate observation of targets and triggers, as well as communications back to the controlling headquarters. Evaluate each observation plan on fundamentals like the following: Observation in depth and the ability to transition fires from the Brigade observers to the Task Force observers. Observation posts able to see the target--and not placed to observe open battlespace where target location is difficult and target attack is generally ineffective. In the defense, the observation plan provides observation forward and behind defensive positions and provides redundant observation of essential fire support tasks. In the offense, the observation plan provides for bounding observation posts and use of brigade observers to initiate missions for the task force while Company FSOs are moving. Consider where Observation Posts should be mounted and where they should be dismounted. Again, the FSCOORD provides the senior oversight and integrates the lessons learned into the unit SOP.

Fire Support Triggers. With observers in place and targets based on the enemy and terrain, we still need triggers to execute these events at the appropriate time. Many times OPFOR will pass directly over planned targets without engagement. Observers often initiate fires on targets without utilizing triggers. In both cases the results are the same: ineffective fires that are late or are not executed. Why? We do not understand the use of fire support triggers and do not enforce our SOPs for marking and executing targets. ***The Fix for Defense:*** Triggers in the defense key on use of a two trigger process to attack a moving enemy. Using classroom instruction, teach observers to use a tactical trigger to initiate an At My Command or Do Not Load mission and a technical trigger to execute the mission as the enemy closes to within time of flight time-distance of the target. Practice execution of triggers against moving targets using JANUS to allow observers to get the mechanics of the procedures. Next, design and

build day and night trigger marking kits for all observers. Add them to section hand receipts and make sure you deploy with them. Lastly, and most importantly, execute a TEWT or FTX and have observers emplace triggers and execute fires against a moving enemy in both day and night. ***The Fix for the Attack:*** In offensive operations, most fire support triggers are based on friendly maneuver events. For example, when a task force closes to within 1000 meters of enemy direct fire range, this could be the trigger to initiate obscuration and suppressive fires. As the task force closes to within 1000 meters of a target, shift 155mm fires to a depth suppression target and initiate 120mm mortar fires. The key is to have triggers to initiate and end missions based on friendly maneuver events and successful completion of fire support tasks. ***Who Uses Triggers?*** Perhaps most important is how we use triggers in executing a scheme of fires. It is arguably the FSCOORD who uses triggers the most. By monitoring triggers the FSCOORD is able to orchestrate the scheme of fires and ensure it stays tied to the scheme of maneuver. The FSCOORD should also have triggers for shifting priority of fires and transitioning fires from deep to close. In sum, triggers allow the FSCOORD to anticipate requirements, prepare batteries for upcoming fire support tasks while firing the current task. The end result is a reduction in idle gun time and continuously engaging the enemy with fires throughout the depth of the battlespace.

Target Location Error. As Field Artillerymen we believe we can fire for effect and receive devastating results on any enemy. Using a PLGR with FOM-1 accuracy for OP location, north seeking gyro for direction, a GVLLD for distance and direction, and a FED or HTU for computation of grid coordinates, we can obtain excellent target location--well within the 300 meters for target effects at NTC. As a backup, we can use a MELIOS with CVAM and a PLGR and obtain quality grid locations as well. Yet in excess of 80% of our fire missions at NTC are ineffective because of target location. Why? First, we seldom see ourselves in terms of the readiness of our equipment and the level of fire support soldier training. The complexity of our fire support soldier's equipment makes it very vulnerable to discharged batteries, cables missing or broken, COMSEC or declination constants not applied, NMC components like a targeting head and NSG, or poor crew drill resulting in slow or inaccurate target locations. We also have a propensity to fire for effect against virtually every spot report--and every rotation since July has included fire for effect on targets with four digit grid accuracy. The "spot report" mission is generally one kilometer off--not just inaccurate but often at risk for fratricide as well. Much of the blame is our simulation training where soldiers have learned to fire for effect in JANUS, CBS and BBS where target location is only a click

of a mouse away. What can we do at home station to reverse this trend? ***The Fix:*** Create a targeting range where observers must locate targets within 100 meters using each of their acquisition devices. Time them with a stopwatch. While most will do well with a fully mission capable FIST-V, they will do less well with a MELIOS and PLGR without practice and good crew drill. Make observers acquire and process targets on the move. Make observers call for fire with degraded devices--especially use of the dismounted GVLLD and compass orientation. If you make your observers go through such rigor, you will find out why target location is so tough at the NTC and why so many missions are ineffective. Certify your maneuver shooters--particularly scouts. "Boresight" this equipment upon arrival in theater to make sure your observers can give you the 8-digit quality grid as advertised. And above all else, make it known that adjustment, refinement and BDA are essential to successful accomplishment of any Fire Support Task--essential or otherwise.

Engagement Area Development. In our engagement areas we can have great success with fires as we integrate indirect fire with obstacles and direct fire. While we often achieve suppressive effects, we seldom achieve killing effects with our engagement area fires. Why? Our shortfalls are directly related to our previous topics: Targeting, observation planning, triggers and target location. ***The Fix:*** Build an engagement area at home station as part of a combined arms training event. In evaluating fire support in the engagement area, consider the following: In targeting, we need to understand how our enemy fights. He will not blunder into the center of an engagement area exposed to every weapon system. Rather he will use terrain for cover and concealment, plan his breach at the anchor point of the obstacle, and overwatch his breaching force with AT-5 fires. To be effective we must plot our targets at obstacle anchor points and use a PLGR to determine the grid coordinates. Look for intervisibility lines outside the engagement area where he would employ AT-5s and plan targets there as well. Plan targets or groups for each enemy course of action giving you flexibility to react to a versatile enemy--not just one target. Emplace tactical and technical triggers for each contingency. Select Observation Posts that can see targets and triggers. Drive the engagement area with a vehicle to validate OPs and triggers. Adjust in the targets to validate target locations and to allow observers to see where the fires are. And above all, Task Force FSOs need to inspect the OPs and rehearse the plan with contingencies for each enemy course of action. Make this part of your unit SOP.

Fire Support Coordination Measures. FSCMs provide force protection from fratricide and also expedite

fires by allowing rapid clearance at all levels. Our doctrine is simple enough and automation allows us to quickly transmit and update FSCMs throughout the force. Yet units struggle to keep FSCMs current and consistent in all FSEs and FDCs. Why? At NTC, FSCM management is no small task with approximately 40 standing FSCMs before the brigade establishes their first FSCM. We also don't use our digital systems to their greatest potential and in the case of IFSAS, it cannot store the number of No Fire Areas (NFA) common to an NTC battle. As a result, units use voice or Plain Text Messages and attempt to manage FSCMs using a "snapshot" technique instead of a system to keep FSCMs current. For example, we disseminate all active FSCMs one hour prior to crossing the Line of Departure and expect all units to be current for the upcoming battle. FSCM changes will be broadcast on the Brigade Fire Support net. The result is wildly inconsistent FSCMs in the various FSEs and FDCs and great confusion as to what FSCMs are still valid from the last battle and who got the last change. By the time we reach live fire, this becomes even more crucial as NTC will not allow any unit to live fire until all FSCMs are correctly posted in mortar and field artillery FDCs. ***The Fix:*** First, integrate 30+ FSCMs into your home station training events to include every live fire exercise you conduct. Make it realistic with continuous updates--deletions, additions and refinements. Second, devise a system that requires confirmation that subordinate units have applied FSCM changes to their maps. For example, the platoon FDCs report to the Bn FDC when they have applied an FSCM change. Once all platoons have confirmed application, the Bn FDC reports to the Brigade FSE that the DS battalion has completed the action. The Brigade FSE, TF FSEs, and the Bn FDC maintain a chart not only showing effective FSCMs but the status of each FSCM at each subordinate unit. Finally, establish check times to verify everyone is on track. Again, make this part of your SOP.

Your SOP. At NTC, Observer/Controllers read unit SOPs to ensure we understand how the unit operates. We have seen many excellent SOPs that have effective methods for accomplishing tactical tasks. However, we very often see units operate outside their SOP--usually with unfortunate results. Had they followed their SOP, they would have had much greater success. Why don't units follow their SOP? The bottom line is that they are unfamiliar with their own SOP. ***The Fix:*** Require all leaders--officers and NCOs--to read and pass a test on the unit SOP as part of a semi-annual requirement much like firing safety tests. Produce different tests for different specialties, with focus on those areas most important to that leader. Put tactical problems in the test requiring the leader to combine doctrinal knowledge with the SOP to obtain an answer.

The Reinforcing Battalion. The NTC is one of the few places where DS battalions actually train with a reinforcing artillery battalion. Our doctrine lays out the seven inherent responsibilities for field artillery battalions to include the responsibilities of DS battalions in positioning and firing reinforcing battalions as well as coordinating logistics support. Yet DS Battalions do not plan position areas, do not direct movement, and many times do not control the fires of the reinforcing units--directly in violation of our own doctrine. The result is a lack of synchronization, lack of mass, and poor terrain management. Ultimately our maneuver force pays the price for the lack of integrated fire support and a subsequent loss of combat power. Why? The rapid battle rhythm of NTC overmatches our leaders in execution of our decision making process. DS and reinforcing battalion leaders decide to conduct separate Military Decision Making Processes (MDMP) using junior officer liaison to represent the reinforcing battalion in the DS TOC. In this process the DS battalion abdicates its doctrinal responsibilities and produces orders with blank spaces for instructions to the reinforcing battalion and a handshake agreement to "handle counterfire." The reinforcing battalion in essence becomes a free agent for the brigade. ***The Fix:*** Integrate the reinforcing battalion into train up exercises for NTC. Consider a joint orders process where the two headquarters produce one of everything: one series of briefings, one Field Artillery Support Plan, one series of FA Rehearsals. Develop an SOP for passing missions from the DS Bn FDC to the reinforcing Bn FDC and how you will mass the two battalions. Determine as part of your SOP what missions the reinforcing unit will execute independent of the DS battalion (for example, counterfire). Make sure you understand the capabilities and limitations of the weapon system the reinforcing battalions brings to the brigade: MLRS is much different than Paladin as is the M198 or M119.

Paladin Battery Movement. Paladin provides unique capabilities unlike any cannon system in the world. It can move rapidly, set and fire within minutes, disperse, and use terrain to survive without considerations for line of sight optics. It can fire and move to mitigate enemy counterfire and can stay closely tied to a moving maneuver force providing continuous fire support. Yet we will typically see battalions use single position areas for entire battalions that restrict survivability movement and present lucrative counterfire targets to the enemy. Offensive operations remain tied to position areas rather than the maneuver force we are supporting, becoming desynchronized with maneuver--sometimes with Paladins leading the attack; other times out of range when needed most. ***The Fix:*** During home station training, always coordinate with maneuver for terrain. Even on a battalion

FTX, call a maneuver S-3 and coordinate terrain during the wargame to exercise the proper procedure and build relationships with maneuver units. Insist on participating with Paladins in maneuver lane training, keeping Paladin batteries tied in with maneuver units and moving through breaches, etc. Direct battery commanders to make ground coordination with maneuver units and use gunnery sergeants to provide liaison with moving units to keep the battery in the proper position. Don't make the NTC the first time your battalion meets the other leaders in the Brigade.

Crew Drill. In FY99 we saw a great number of firing incidents**--**equally divided between fire direction and howitzer errors. These included the same errors we have seen for years in the field artillery: charge errors, fuze setting errors, deflection and quadrant errors, transposed numbers, incorrect target altitude, and improper M825 smoke work around procedures. We have also had numerous howitzer and fire direction centers placed in checkfire for violating doctrinal crew drill procedures. Why? Part of the reason is the volume of fire units process at NTC--both in force on force and in live fire. We also fire multiple shell fuze combinations and various charges from the same location and routinely operate with degraded systems: digital communications out, voice relay of data, broken printers, Paladin sub systems degraded, etc. All of these place a premium on proper crew drill and systemic secondary checks. ***The Fix:*** First, establish a rigorous section certification program and award your best sections--most battalions are already doing this well. Second, the FSCOORD and CSM should observe every gun section and FDC process a live fire mission during routine training. Use a stopwatch to make sure they can execute doctrinal crew drill within their Mission Training Plan time standards. Finally, run all howitzer and FIST sections through live fire degraded operations lanes and make them demonstrate their proficiency in degraded operations. If you expect your gun sections to fire completely degraded (M109A5 mode) at NTC, then make sure you train it at home station prior to NTC. For FDCs, make them practice POC transfer several times per day and between different batteries. If your battalion effectively implements a system of secondary checks, you will greatly reduce the likelihood of firing incidents.

Ammunition Management. Battles are never won with outstanding ammunition management--but they can be easily lost if ammunition is not on hand when we need it. At NTC we typically see units unable to maintain accountability of ammunition, project ammunition requirements for missions, requisition ammunition to support the mission or deliver the correct ammunition to the firing batteries on time. As a result, it takes aggressive last minute

leadership to step in and fix the problem before it stops us dead in our tracks. Many claim the problem is paper ammunition used during force on force and how much better they will do with real ammunition. Yet when the real bullets come they do worse--especially with fuzes, square weights, powder lots and shells that weigh 100 lbs. Why? First, we are challenged to see ourselves in ammunition on hand: what is in firing batteries, on Palletized Load System trucks, in the Combat Trains or in the Field Trains. Second, we don't quantify our ammunition requirements from our fire support tasks during mission analysis to allow our logisticians to begin requisitioning and bringing ammunition forward. ***The Fix:*** First, elevate the level of your battalion MDMP to include routinely determining your ammunition requirements during mission analysis based on the fire support tasks in the brigade order. Make sure you allow for opportunity targets and target re-attack to get a true estimate of ammunition requirements. Make an assessment of likely ranges to determine powder requirements as well. This will allow your S-4 and ammunition platoon to get a head start on ammunition requirements for your upcoming mission. Refine your ammunition projections during the wargame. Second, integrate a paper ammunition system into your training and practice realistic ammunition accountability, resupply and requisitioning during your NTC train-up. Finally, use the systems the Army provides us to keep count of ammunition: the AFCS and LCU/AFATDS.

"Well, it worked in JANUS....." We hear this phrase a lot at NTC, usually after a battle. Indeed, simulations are how we train and even the NTC is a simulation--albeit far more realistic than computer simulations such as JANUS. Just as we must use caution in learning lessons and changing doctrine from our experiences at the NTC, we must be even more careful with the lessons from our computer simulations such as JANUS and BBS. Fire support works well in JANUS and BBS largely because the greatest challenge we have is just a mouse click away--and every soldier on the battlefield can get the same precision in target location. Communications can be as simple as walking to the next room or processing the mission at the same workstation. Not so in the real world and not so at the NTC. Our simulations often do not stress the lowest levels of our call for fire systems, especially for the Company FSOs and COLTS. Our simplistic simulations communications systems lead us to utilize one voice net to execute our scheme of fires--the Brigade Fire Support Net. When we bring this one net system to the NTC and extend it over great distances, add multiple missions, fire support coordination, friction, and the huge challenges that face the Company FSOs and COLTs--the one net system becomes an albatross too heavy to fly. ***The Fix:*** First, insist on friction during simulation exercises. Set up all of your doctrinal fire support nets and exercise them

and your SOP. Don't allow clicking grids or targets shown on screens. Introduce friction and multiple activities into the exercise. If you plan to "execute voice" as has every unit for the past six months, look at how you will make that happen on one net. Consider decentralizing certain tasks onto other nets, such as Counterfire, SEAD, CAS marking, Copperhead, and smoke. By moving those missions to other nets (for example, a platoon net for Copperhead) you increase your ability to allow for observer adjustment and clear the Brigade Fire Support net for mass missions and EFSTs. And finally, make sure you answer this question:

Who trains the FSCOORD? Our FSCOORDs have no school that teaches them how to orchestrate a scheme of fires for a Brigade Combat Team. The art of his job is to visualize the battlefield and prepare the DS and reinforcing battalions for one or more fire support events while executing another. He crosstalks with the Brigade and Task Force FSOs to monitor events and sets the stage for event execution and transition of fires from deep to close and from task force to task force. When he asks the battalion FDO "What is the focus of fires?" or monitors a net filled with opportunity calls for fire actioned without priority, then he is not an artist--just a spectator. ***The Fix:*** Make sure the FSCOORD is part of the train up. Give him an Observer/Controller to provide feedback on his execution of the brigade scheme of fires. The Divarty Commander can provide the senior leadership to teach and train the FSCOORD so he can practice his art at the NTC--and not have to learn it there. And yes, make the role of the FSCOORD and how you will execute a scheme of fires part of your SOP.

Home station training makes a huge difference in unit performance at the NTC. In fact, shortfalls in home station training are the most compelling reason for the limits to our success against the World Class OPFOR--not the more popular excuses. Most of the training we need is not training dollar expensive, but it is expensive in both training time and leader energy. But, we can make it happen. Let's drop the excuses and get on with the training that will make us successful. As your fire support Observer/Controllers, we embrace each and every field artillery unit that comes to the NTC. Our mission is to develop adaptive units and fire support leaders skilled in the art and science of war. We are absolutely committed to the success of fire support and want to sustain the King of Battle in a position of dominance on the NTC battlefield and any other that might find American Redlegs. We look forward to seeing you bring devastating fires on the world class OPFOR during your next trip to the High Mojave. ***Train the Force!***